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THE DIAGNOSIS AND TREATMENT OF CARCINOMA OF THE LARGE INTESTINE*

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Carcinoma affects the large intestine frequently, the small intestine infrequently. In the large intestine most carcinomas originate in the rectum and sigmoid.

Etiology. The cause of the neoplasm usually is not evident. An hereditary predisposition, an age between forty and sixty years, male sex, and those conditions that produce a chronic irritation of the colon and rectum, such as mucous, ulcerative or membranous colitis, polyps or adenomas, chronic constipation or dysentery, and diverticulitis predispose to the condition. Three per cent of the tumors occur below the age of twenty, one of our patients was thirteen years old.

The symptoms vary with the part of the bowel involved, and with the type of carcinoma. In the rectum, ulcerating, papillary or fungating growths are usual, and produce diarrhoea and bloody mucous stools. In the recto-sigmoid, descending colon, splenic flexure and distal half of the transverse colon small annular growths which cause constipation and intestinal obstruction predominate. In the cecum and ascending colon, large fungating or ulcerating, but not obstructing lesions forming masses which may be seen or felt through the abdominal walls, are common. With the latter intense anemia or ill-defined abdominal distress may be the first symptom. Large papillary growths may secrete quantities of mucous, the patient passing large amounts of a nearly clear but rather viscid fluid several times a day. The symptoms of carcinoma of the large bowel, therefore, vary greatly.

Constipation. A patient in apparent health may suddenly develop abdominal cramps, vomiting, obstipation from an acute obstruction due

to an annular carcinoma or more often have progressively increasing constipation, that finally causes recurrent abdominal cramps, loud intestinal noises, and hypertrophy or dilation of the bowel above the growth. The colicky pains may recur every fifteen to twenty minutes and the distended intestinal coils showing active peristalsis be evident on inspection of the anterior abdominal wall. One elderly man with an obstructing sigmoid growth said it had been over two months since his bowels had moved. With the higher sites of occlusion, the obstructive symptoms are more violent and acute. It should be remembered that next to fecal impaction, the most frequent intra-abdominal cause of chronic intestinal obstruction occurring during and after middle life is carcinoma of the colon. The ribbon stools described in the older textbooks are rare but may occur with anal growths.

The diarrhoea of rectal carcinoma has special diagnostic features. Very significant is an apparently causeless morning diarrhoea, arousing the patient between five and seven in the morning, with perhaps no abnormal movement after the patient has had breakfast. Rarely is this due to other cause than rectal cancer. Tenesmus indicates that the growth is close to the anus, while mucous stools suggest papillary overgrowth, or an irritation of the mucosa; offensive bloody stools show that ulceration is present. The peculiar fetid odor due to decomposing blood and malignant tissue, is considered by some proctologists pathognomonic of cancer. The peculiar odor, however, is not to be expected with all papillary growths, or with cancer before the stage of necrosis and ulceration. Diarrhoea is also characteristic of growths of the right half of the colon. As with cancer in many other parts of the body, pain is not a symptom. It results from complications, such as ulceration, perforation, obstruction, or invasion of other organs. I was impressed by the wisdom of a patient who called complaining of an increasingly offensive, bloody and mucous diarrhoea. And said he, "I think it is from cancer, because it causes no pain."

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Obstruction, therefore, may cause pain and colic; the diarrhoea of cancer in the early stages may be free from pain and colic.

Blood in the stools is usual with most of the growths of the left half of the colon, but often is not recognizable despite the progressive anemia in growths of the right colon. With cancer of the left colon cachexia may be delayed for months or even two or three years.

By the history alone, one may not infrequently be able to make an accurate presumptive diagnosis that the patient has a cancer of the large bowel, that it involves the rectum, sigmoid, or right colon, that it is a large papillary growth without ulceration, or a fungating, ulcerating tumor, or a small annular scirrhus growth. But, of course, one should not depend upon the history alone. A large proportion of the tumors are easily reached by a finger in the rectum and the majority of these may be accurately diagnosed by touch alone. The deep ragged crater of the malignant ulcer, the craggy, raised, rolled and everted border, the infiltration into the wall of the bowel, are rarely mimicked by other pathological conditions. Growths somewhat above the reach of the finger may be inspected by the proctoscope or sigmoidoscope. Carcinomas in or above the sigmoid, of large size, may occasionally be felt through the abdominal wall, but a small annular growth may be difficult to locate even by the hand in the open abdomen.

In diagnosing the growths higher in the colon, a roentgen study after a barium-meal or enema is invaluable. It does not compete with the examining finger, however, in diagnosing the lower rectal growths. Not long since, a patient called with roentgen films which showed no disease; while a finger instantly detected an advanced growth two or three inches above the anal margin.

Treatment. Cancer of the colon and rectum is particularly amenable to surgical extirpation. Better results, perhaps, follow radical operation than for malignancy of nearly any other internal organ. Certainly the results are better than for cancer of the stomach. Radiation by roentgen-ray or radium has given so little benefit, that surgical removal is urged for all growths limited to the bowel and adjacent removable parts. With the results now to be obtained by operation, the routine palliative colostomy urged by a number

of proctologists some years back can no longer be sanctioned.

For cancer of the proximal two-thirds of the colon, a one or two stage, intra-abdominal resection and anastomosis is the preferred operation; for growths of the sigmoid and rectum an abdomino-perineal excision by a single or multiple stage operation is to be preferred. The danger of the intra-abdominal operation may be reduced by a previous proximal enterostomy, especially if there is obstruction, and perhaps also by the preliminary intraperitoneal injection of a vaccine, as used by Rankin and Bagen. For the sigmoid, a three-stage exteriorization operation of the Mikulicz type has of late years been popular, but a more thorough operation is not infrequently desirable.

Fortunately, the lymphatic diffusion from carcinoma of the large bowel is often slow, and metastasis to other organs may be long delayed. McVey estimates that at seven months the lymphatics are involved in only seventeen per cent; at ten months, in forty-seven per cent; at eleven months, in seventy-one per cent. On an average, a growth that involves three-fourths of the circumference of the rectum has been present a year. This indicates the importance of an early diagnosis. Surely with a disease so readily diagnosed, delay should not occur until ulceration and undue infiltration are present. We should most carefully consider any gradual or abrupt change in peristaltic habit in a patient after the age of thirty-five. Cancers occurring before the age of thirty-five are rarely curable. Before removing the involved segment of bowel, a careful examination for metastasis should be made, including a roentgenogram of the pelvis and spine, and, if possible, a careful intraperitoneal palpation for nodules in the liver, the aortic and pelvic lymph nodes, and the peritoneum.

For cancer of the rectal ampulla and lower sigmoid, the tendency in recent years has been to abandon the perineal or Kraske type of operation and the perineal or sacral anus, and to substitute a two-stage operation, with an abdominal colostomy.

Technique. After seeking for years for a satisfactory type of operation, we have now largely abandoned colostomy, except as an emergency procedure, and adopted a one-stage abdomino-perineal extirpation, bringing the proximal end

of the sigmoid to the perineum or into the normal anus. This, we believe, has many advantages. The abdomen is opened and carefully explored for metastasis, after which the peritoneum forming the outer layer of the mesosigmoid is freely incised, the superior hemorrhoidal vessels divided between ligatures and the sigmoid and rectum freed to the floor of the pelvis in the conventional manner. A one-yard folded strip of iodoform gauze is now firmly tied around the bowel about ten to fifteen cm (4 to 6 inches) above the growth. This gauze is packed against the pelvic floor, and the liberated sigmoid and rectum laid upon it.

The abdomen is now carefully closed without drainage, without any attempt to cover the denuded area in the pelvis, or to form a pelvic diaphragm of peritoneum. Such a diaphragm which has routinely been used is, we believe, entirely unnecessary and often harmful. A number of deaths have resulted from obstruction due to tension on the lower ileum or to herniation of a loop of bowel through the sutured peritoneal flaps. After the abdominal closure the patient is immediately placed in the lithotomy position, a median incision made between the coccyx and anus through the pelvic floor, the strip of gauze grasped and pulled out with the large loop of bowel containing the tumor. From thirty to eighty centimeters of bowel may thus be withdrawn. Posteriorly and to the right an iodoform gauze pack is introduced into the pelvis along the loop to guard against contamination. With the pack and an occlusive dressing in place the loop of intestine is removed and a rectal tube tied in the proximal end. At a later time, the end of the proximal loop may be connected with the anus if this has not previously been removed, or if the patient is in good condition, the proximal end of the bowel may be pulled through the thoroughly dilated or split anus. An esophageal bougie passed through the cleansed anus and tied in to the proximal loop is useful for this purpose. If the growth, however, involves the lower part of the rectum, and is highly malignant a wide resection of the pelvic floor with removal of the anus is done.

Although after testing by finger pressure, we have even tied one or two of the sigmoid arteries as well as the superior hemorrhoidal, in order to remove a longer loop of bowel, rarely have

we had the sloughing of the sigmoid, so common after the Kraske type of operation. In ten consecutive operations in the last six months in which the method was used, there was no serious reaction or shock, little post-operative tympany, and all the patients are now living. With retention of the sphincter, control of the fecal movements is, of course, possible. With the sphincter removed, the warning sense of impending defecation is usually felt by the patient, and a pad held by a T-bandage gives a protection that compares well with the average colostomy apparatus. A rubber sponge may be worn over the pad for better control. We have one patient with the bowel pulled through a flap of the buttock with such good control that she does not require a pad. For the small and more superficial carcinomas of the lower rectum which show less malignant tendencies, a wide local resection of the tumor through the dilated or split anal opening is at times a very satisfactory operation, giving a perfect functional result. I have observed several of these patients who had no recurrence for a number of years after the operation.

SUMMARY

1. Carcinomas of the large intestine should be diagnosed early by alterations of the peristaltic function, digestive disturbance, progressive anemia, and by roentgen, digital and proctoscopic examinations. Offensive, bloody, mucous stools, intestinal obstruction or cachexia usually indicates a growth of long standing.
2. Operative excision, if the growth is not too far advanced, gives a very reasonable hope for recovery. Radiation is ineffective against most of the intestinal carcinomas.
3. From the ileum to the descending colon, an intraperitoneal excision and anastomosis, with careful attention to preserve the blood supply of the retained bowel, is the preferred type of operation.
4. From the descending colon to the lower rectum a combined abdomino-perineal operation is preferred as permitting thorough exploration, followed by radical removal of the bowel with the tributary lymphatics, as well as the preservation of an adequate circulation for the retained intestine.

5. A method of abdomino-perineal resection is advocated by means of which colostomy is eliminated and the bowel is not divided or invaded until after the peritoneal cavity is sealed. With the higher rectal growths, the sphincter may be preserved; but with the lower ones, a wide resection of the pelvic floor may be necessary. In ten cases in which this operation has been used, less shock and reaction followed than after any other type of operation tried.

6. For the small, low-lying rectal carcinomas, with slow infiltrative tendencies, a local excision through the enlarged anus may be adequate. No experience has been had with the metastases from anal carcinoma to the inguinal lymphatics, as described by Miles.

7. The advantages of a properly made perineal anus should be evident. It may be cared for with less derangement of the clothing than a colostomy, and is easily controlled by a pad and rubber sponge pressure. The perineal opening also more surely gives warning of an impending defecation than does the colostomy, and by digital examination one may obtain early evidence of a recurrence in the pelvis at a time when excision or local destruction is effective. All patients observed have considered their perineal anus preferable to a colostomy.

DISCUSSION

DR. W. EDWIN BIRD, Wilmington: Dr. Babcock's new technique seems to me to be a very valuable contribution. His modification of the combined abdomino-perineal operation seems an improvement over the Coffey technique, which is so popular today.

There are two things to bear in mind: first, the relative ease of the operation as compared with the Coffey, and second, the lower mortality. Even in the hands of Coffey his operation has a mortality rate of approximately 5 per cent, and while Dr. Babcock's present series is small, only ten cases, the mortality can be judged, and where you have a mortality rate of nil in ten cases, I would say it was distinctly a good operation.

DR. BABCOCK: I may mention that ten years or more ago, we devised an operation for the re-

moval of the bowel somewhat like that later advocated by Dr. Coffey. After liberating the rectosigmoid from above, an esophageal bougie was passed to or through the malignant growth from below and a ligature tied about the bowel and shaft of the instrument just below the bulbous end. By traction upon the bougie the bowel could be inverted and drawn out of the pelvis. Unfortunately we soon found that under the traction and inversion, the tumor or bowel would often split open with the escape of septic material into the pelvis and it was soon evident that the shock and infection which attended the procedure made it prohibitive. In the Coffey operation, traction in a somewhat similar manner is made upon a rectal tube sutured to the upper end of the liberated intestine and there is the same danger of rupture and contamination. We think it an important part of the technique, therefore, that the bowel be not inverted or traction made through the malignant growth.

THE INJECTION TREATMENT OF HEMORRHOIDS*

C. C. NEESE, M. D.

Wilmington, Del.

It is with a great deal of pleasure that I present for you this subject, hoping that you will find it interesting and instructive. Volume after volume has been written about hemorrhoids and their treatment; since the birth of Cain outside the Garden of Eden hemorrhoids have been known to the human race.

Patients present themselves for all other examinations without hesitation; not so for rectal conditions, for only after having tried all advertised pile cures does he present himself for examination and treatment, and when he feels that his condition has become an emergency.

The reason for this reluctance is because society in general demands that the rectum and its troubles shall be among the unmentionables,

*Read before the New Castle County Medical Society, Wilmington, November 17, 1931.

for if spoken of at all, it is in a vulgar or slighting manner. Almost daily patients come to the office with the story that they have been treated with salves and suppositories for a long time, but never had a rectal examination, or even an accurate history taken. Our indifference to our rectal patients fosters the advertising quack, of which we have a new example in our midst, one who is advertising free examination, and expects to do a big business because of our failure to show any interest in our patient's rectal troubles. Every patient who has an ailment of sufficient importance to warrant his coming to you deserves examination. If you feel that examining a patient's rectum is not to your liking, send him to some one who will do it. I am like Dr. Buie, of the Mayo Clinic, I would rather put my finger in a patient's rectum for diagnostic purposes, than to shake hands with him socially.

The injection of hemorrhoids was first done in this country in 1871 by Mitchell, who used a 33-1/3% aqueous solution of carbolic acid, and in a period of five years injected over 3,000 cases. Mitchell, however, kept his method a secret and sold it to individuals then known as pile curers, who were non-medical men. This was the introduction of the charlatan in the field of proctology.

Then Kelsey, in 1882, advocated this treatment, but the severe sloughing made it dangerous and extremely painful, causing strictures, which led to the discontinuing of the method.

Mr. Swinford Edwards, in 1889, introduced the method in England, since which time every percentage of carbolic acid, and all the other escharotics in the pharmacopea have been injected into hemorrhoids. Some of the most used are witch hazel, ergot, zinc chloride, salicylic acid, sodium borate, sodium salicylate, adrenalin, alcohol, formalin, and quinine-urea hydrochloride.

Within the last ten or twelve years the technique and solutions have to a certain degree been standardized. The first school used a 33-1/3% carbolic acid solution, following which the pile sloughed off. Then came the school using not over 20% carbolic acid in oil, with which solution you get a severe inflammatory reaction. Today, I think most proctologists are using a 5% solution of quinine-urea hydrochloride, which was introduced by my friend Dr. Terrell, of Richmond. This solution causes no pain, sel-

dom is there a slough or infection, the inflammatory reaction is mild, and the resulting fibrosis of the hemorrhoid quite satisfactory.

Hemorrhoids are varicose veins of the rectum. Internal hemorrhoids are varicosities above the anorectal line, and are branches of the superior and middle hemorrhoidal veins; they are innervated by the sympathetic system, and are therefore painless. External hemorrhoids are varicosities below the anorectal line, innervated by the cerebro-spinal nerves and are painful. The anorectal line, you will remember, is the line of fusion in the embryo of the fore and hind gut (proctoderm).

The diagnosis of internal hemorrhoids, per se, or in uncomplicated cases may be very difficult, unless, however, there is sufficient prolapse into the sphincter, or unless the patient squats down and strains as at stool. The symptoms are often vague until there is a complication, either a thrombosis, prolapse, strangulation, bleeding, ulceration, or proctitis.

The symptoms of uncomplicated internal hemorrhoids are: constipation or diarrhea, bleeding, and dragging in the sacro-iliac region. Internal hemorrhoids are ideal for injection because, as I have already told you, they are painless; pain is only experienced when there is a pull on the bowel. Therefore, if you are not sure that the area to be injected is above the anorectal line, the fact that your patient feels pain will assure you. Do not inject complicated hemorrhoids, except for bleeding and prolapse, but clear up the complication first, then make your injection, otherwise your injection may cause much more serious trouble than the trouble that you are trying to cure. Never inject when there is an infection present. External hemorrhoids should never be injected. The advantage of this injection treatment is that your patient is not incapacitated at all, he walks in, is treated, and is able to walk out.

Place the patient on the left side, right leg flexed, have patient hold up right buttock out of your way. Introduce your index finger, well lubricated, into the rectum, and find out: (1) calibre of the rectum, (2) the presence of inflammatory areas, (3) the presence of stricture or tumor. This also relieves the muscle spasm, thus gaining the confidence of your patient, be-

cause all such patients are nervous, not knowing what to expect.

Introduce your anoscope, well lubricated, as far as you can, remove the obturator and inspect the tract from above downward to check your digital examination. Re-insert the anoscope and locate the hemorrhoid that you wish to inject, paint the surface with mercurochrome. Insert your needle just under the mucosa, and inject until there is a blanching of the mucosa. Withdraw your anoscope first, then your needle; this is to allow the natural muscle pressure to close the puncture, thus controlling any possible chance of hemorrhage, which may occur in about two-fifths of one per cent of the cases.

SUMMARY

I wish to emphasize three points:

1. Most important, make accurate diagnosis, by examining your patient.
2. Inject only internal hemorrhoids, that are uncomplicated, except for bleeding or prolapse.
3. The least irritating solution and the one which, in my opinion, is the most efficient, is 5% quinine-urea hydrochloride.

RELATIONS OF DELAWARE PUBLIC HEALTH TO INDIGENT SYPHILITIC CASES*

ARTHUR C. JOST, M. D.
Dover, Del.

Mr. President and Gentlemen: I am very sorry indeed that I have to commence the remarks I shall make with an apology. I haven't a paper. There are several things I should like to place before you, several things of which I think it is to your interest to know, and from which I hope in the future all of the residents of the state will profit.

My remarks under any circumstances will be only preliminary to an address to be given you by Dr. Clark, of the U. S. Public Health Service, at Washington, whom we have with us this afternoon. I am sure you will all be pleased indeed to hear him.

We were very greatly interested in the State Board of Health in the work which has been done by this Society in connection with venereal disease control. I thought that to start off I

would give a brief resume of what venereal disease control means and what we are attempting to do in the state in the matter of venereal disease control, and perhaps lead up from that to the expression of the opinion which we have arrived at, that in order to do more work in relation with the cutting down of our excessive infant mortality rates, we must do more venereal disease work.

Briefly, then, venereal disease control in this state consists in, first, notification of the disease. We endeavor to get an idea of the amount of venereal disease there has been in the state. That system was put in force only the first of this present year. It was on the statute books previous to that but not enforced until this year. We think we have made progress since, in the first six months ending June 30th, we have received reports from various sources to the State Board of Health Office indicating, I think, about four hundred cases of venereal disease per each hundred thousand population, which is about the standard. If we keep that up, I think our system of reporting will be at least fair in comparison with other states.

Secondly, an important part of our program is the maintenance of clinics. We have three in Wilmington and one in Dover, and bismuth, arsenical, and mercurial preparations are required all over the state. We think very valuable work is being done at those clinics.

I believe the report of your Committee on Syphilis introduced before the Society yesterday advised a better system of follow-up. We are certainly in favor of that because we wish to make those wholly satisfactory clinics and we wish those clinics to do the work for the people of the state which they should do.

Thirdly, we have arranged a place for free examination in our laboratory of specimens. We do an average of about a hundred a week, in addition to the Wassermanns and other work of that kind done in other places in the state. Those are all checked up by Kahns, and we think very satisfactory work is being done.

Then also we do what we can in the way of educational work. I admit we don't do as much of that as we should.

I should like to also call your attention particularly to the fact that at least two items of our program were influenced largely by the re-

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port of the Committee on Syphilis which was appointed by this State Society several years ago. In the first place, notification was requested from the practitioners of the state in connection with the report and, in the second place, we were able to put into effect through the State Board what I believe is and will be found to be a very satisfactory food handler's regulation.

You may remember it was something in connection with the handling of food by infected persons which aroused the State Society in the first place to appoint that Committee on Syphilis, and we have, I believe, now on our books among our regulations, a quite satisfactory food handler's regulation which certainly it is the intention of the board to enforce. That is our program, inefficient in places, but one which we think if expanded properly and if the proper attention is paid to it in its various details, will act for the profit of the people of the state.

The matter of high infant mortality rate in our state is one of which I believe every physician in the state should take cognizance. At the White House Conference held in Washington in December last year, quite a large number of Delaware representatives were present, about forty or more. I am quite sure of the forty, twenty persons asked me why it was that the State of Delaware, this little state most favored in many ways of all, had one of the highest infant mortality rates of any state in the union.

In the year 1929 that infant mortality rate was about 81. That is the official figure given from Washington. We were fifth from the bottom with respect to the height of infant losses. We are fortunate to be able to say that for 1930 we have improved a little, our rate being down to about 78; from the position of fifth from the bottom we have moved up to seventh, an improvement perhaps not very large, but at least indicating a slight gain.

I think the official Washington rate was about 78. It seems that the states—Delaware, Maryland, and the Virginias—have infant mortality rates which very closely approximate each other. For several years these four states have been rather see-sawing with regard to these rates. One year one of the four would be very slightly above the others, and last year it happened that Delaware was the lowest of the four. This year I think it is West Virginia which is the lowest of

the four, and that has brought our position from the fifth from the bottom to the seventh from the bottom.

We have to remember, in connection with all, the similarity in the composition of population. About a seventh of our population is colored and the infant mortality rate among the colored is relatively high. Our rate for whites is almost exactly the same as the rate for whites in Pennsylvania, not quite so good as the rates which New Jersey is able to attain. The rate for the colored population is about double the rate for the whites, and it is that excessive infant mortality rate on the part of the colored population which gives this state a relatively bad place.

The reason why I am interested in this being connected up with the venereal disease campaign is that we have become quite sure that we cannot make much more progress in reducing our infant mortality rate until we have succeeded in doing more for the control of venereal disease.

Since 1920 in this state there have been 4612 infant deaths. In 1920 the number of infant deaths was 590. Of that 4612, 387 infants, I believe, died in the eleven years from the class of diseases which are called "general" diseases, including almost altogether communicable diseases, and of that 387 no less than 56 deaths were given as due to syphilis.

You have to remember that in addition to those deaths which actually are placed on the death certificates as due to syphilis, a large number of deaths occur in which syphilis is a causative factor. Here you can consider many of the deaths, for example, which appear on the death certificates as due to premature birth, many of which are recorded as congenital debility, and some of those credited to other causes, all together a very, very imposing total.

A person who has given a large amount of study to this has made the statement that actually syphilis among the whites must be considered or is really the cause of about 12 per cent of all infant deaths, while among the colored it is a contributing cause to about 45 per cent of all the colored deaths.

If we could do more for the control of syphilis, if we could wipe out the cases of syphilis and stop the deaths, not only those credited to syphilis alone on our death certificates, but also those which are credited to premature birth and con-

genital debility, our position would improve at least 16 per cent. Instead of 387 deaths as we had in the state last year, the number should be cut down until our rate is at least 65 instead of 78 per cent.

We in the department are quite convinced that if we are to improve our infant mortality rate to a greater extent, we must do something more for the control of the venereal diseases. So much is this the case and so interested is the department in the bringing about of a more satisfactory condition of affairs, that it had been my intention to ask this organization to appoint a committee to confer with the State Board for the purpose of seeing what could be done.

We have profited very much from your assistance, and have progressed a great distance already in connection with venereal disease control. Without your assistance we would hardly have dared attempt asking for venereal disease reporting and the same thing is true of our food handler's regulation. With your help we can do these things; with your help we have been able, I believe, to make what is turning out to be a magnificent success, in regard to diphtheria immunization, in the City of Wilmington. Up to the third day we have succeeded in getting 1600 immunizations for the two days, and at that rate we shall accomplish our aim—about 5,000 in the City of Wilmington—and that ought to place Wilmington in a relatively good position so far as diphtheria deaths are concerned.

So, we need your help; and if this organization would name a committee to consider infant mortality rate reduction—I don't know how it can be done to keep the method within that of strict parliamentary procedure—I feel sure that the State Board of Health would appreciate very greatly your efforts.

Your president will doubtless introduce Assistant Surgeon General Clark, who will speak of other matters in connection with this, and I am sure that the message which he will bring you will be one which will be very valuable indeed.

Thank you very much indeed, Mr. President.

DISCUSSION

DR. TALIAFERRO CLARK, Washington, D. C.: Mr. President and Members of the Society: Will you permit me to express the great pleasure it

gives me to be present and meet the distinguished representatives of the medical profession assembled in this meeting, and to convey to you the best wishes of the Surgeon General of the Public Health Service for the success of this meeting.

When I was a student in my sophomore year at college, it was one of my disagreeable duties to translate Seneca's "Essay on Providence," and I was very much struck with the statement he made in the opening paragraph of that essay. He said, "Why have you inquired of me why is it that so many good things happen to bad men and so many harmful things happen to good men?" And he said, "I can't begin to answer this question by piecemeal. I have determined to discuss the whole question."

And so in attempting to answer the question whether I should confine my remarks to the subject as presented by Dr. Jost, "The Relation of Delaware Public Health to Indigent Syphilitic Cases," which would necessarily mean confining my remarks to narrow detail, I thought I should be discussing this question only in part.

I should like very much to call to your attention the seriousness of syphilis as a public health and sociological problem. It is a disease that can remain latent for long periods of years and pass on to the unborn generation. It is a disease which requires prolonged and somewhat painful treatment. It is a disease, the cost of treatment of which is such as to be way beyond the means of the vast majority of those afflicted if they were to pay the full fees demanded usually for such treatment.

Since 1927 the Public Health Service has conducted in co-operation with the American Social Hygiene Association, with the state and local health departments, a one-day census covering one-fifth of the total population of the United States. By that we mean a census of the total number of cases of venereal disease under treatment on a given date. By that we did not mean treated on that specific day, but on the books of the clinic or of the physician as being still under treatment, and we found out some very remarkable things.

We found on the basis of this census that there are actually under treatment in any one day in the United States 641,000 cases of syphilis and 470,000 cases of gonorrhea.

We also made a study of the incidence of these

diseases in the general population of the United States, and by that we mean fresh infections which came under the notice of these treatment centers and physicians, and we found the figures almost reversed. There were actually under treatment on any one particular day in the United States during the year approximately 425,000 fresh cases of syphilis and 670,000 cases of fresh infections of gonorrhea, so you may see that this is a tremendous problem, and on the basis of this census which was sent to clinics and physicians, and to irregular practitioners who were treating patients in some states, and in our estimation including only those returns that were equal to and above 80 per cent, we found that the syphilis rate in the United States is four per one, thousand, and that is very conservative.

The State of Delaware, I understand, has a negro population constituting about one-seventh of the total population. With the financial assistance of the Julius Rosenwald Fund, the Public Health Service has co-operated with certain southern states in determining the feasibility of the mass control of syphilis among the negro population.

This study, or demonstration, if you please, was carried out in the following manner: After securing the consent and co-operation of the state and local health departments, representatives were sent into the community, usually the county unit, and made contact with the local medical society and received their endorsement, made contacts with practicing physicians individually, and with businessmen, with the educational authorities, with the leaders of the negro race; and we found it perfectly feasible to round up every man, woman, and child and give them a Wassermann.

Then all of these cases that were found to be positive were assembled at a convenient point or points and given a careful physical examination and a Wassermann recheck, and urinalysis.

A point of great interest is that instead of being four individuals in one thousand in this negro population afflicted with syphilis, we found in one county thirty-five in every hundred, and in a county in Mississippi twenty-three in every one hundred, and in a county in Tennessee, nearly twenty-nine in every one hundred; in Georgia, between 19 and 20 per cent. In North

Carolina it was actually 12½ per cent, and in Albemarle County, Virginia, 6.8 per cent, that is six, practically seven, people in a thousand, and thirty-five in a hundred, as compared with our one-day census which revealed only four per one thousand in population.

When we reflect on the terribly devastating effect of this disease and the tremendous social and economic results of syphilitic infection, we can see what a tremendous problem it is which confronts the public health authorities of the United States; in fact, more and more state health officers are beginning to realize it and emphatically are stating that this is the foremost public health problem demanding their attention at the present time.

This is a disease that is responsible for between 11 and 12 per cent of the total admissions to the hospitals for the insane throughout the country each year. It is estimated that they care for this number of insane, these people with general sepsis and general paralysis, and cases of locomotor ataxia that are hospitalized, and they cost the country \$11,200,000 annually.

It is estimated, due to the loss of time at labor, due to the cost of treatment of ambulant cases and hospitalization, and the shortening of the span of life, that the tax of syphilis alone in the United States is \$13.20 per capita.

The total cost for the twenty-five institutions operated by the United States Public Health Service for service beneficiaries is a little over a million, something like a million two hundred thousand, and 20 per cent of this total hospitalization is concerned with the care and treatment of the venereal diseases, an approximate cost of this one service alone of \$240,000.

And then when we reflect upon the increasing number of deaths from heart disease—it is now advanced to be the prime killer, the great first killer, the great killer of mankind at the present time, and approximately 18 per cent of these deaths, so far as we are able to judge from available statistics, is due to syphilis.

Dr. Jost has spoken to you of the role of syphilis as a factor in neonatal mortality. A recent report, a comparatively recent one, by the Census Bureau, stated that 43 per cent of neonatal deaths were due to prematurity, and very careful statistical analysis by those most careful observers, the Germans, stated that in Germany

20 per cent of the neonatal deaths were due to syphilis; that is, the premature deaths were due to syphilis. So, you see what a tremendous factor it is as a cause of early infant deaths.

We have no accurate statistics other than those based on institutions as to the role of syphilis in antenatal death, but a very interesting observation was made to me by the manager of a big plantation in Mississippi covering forty thousand acres. It is operated by an English cotton syndicate for the raising of long staple cotton, and he conceived the idea that syphilis tended towards economic inefficiency. There was nothing altruistic in his plan at all.

He called upon the Mississippi State Board of Health and the Public Health Service in turn, to come down and Wassermannize nearly four thousand working people on this plantation and put them under treatment. This was done and there is where we found 26 per cent of them with Wassermann positives. This gentleman maintained a hospital for his negro help and an active ambulance service, and so interested was he in the problem of a healthy workman, that, for example, he would permit his physicians to make a charge of \$10 for each obstetrical case, but if this woman would come to the hospital, he would send the ambulance for her and take her into the hospital and treat her for nothing. He realized that disease was a poor economic asset.

In a personal letter to me after the demonstration was completed, he stated among other things that his physicians said on this plantation during preceding years there occurred fifteen stillbirths, and during the latter years, beginning with the latter half of this treatment program that we carried out, there had occurred but two stillbirths, and we purposely had gone into counties where there was an organized health department, where there were available rather active vital statistics, in order to evaluate, the year following the completion of these surveys in this treatment, the effect of this treatment on this very question, that is, on the problem of antenatal and neonatal mortality.

I am particularly pleased to have this opportunity to speak to you as physicians and not as apostles of preventive medicine, to speak to you gentlemen who are concerned with the curative side of medicine, because without your assistance and co-operation, the health authorities can

never become as effective as they otherwise would be in controlling these terrible scourges.

A little over a year ago the League of Nations entered on a world-wide study of the effect of treatment, antisyphilitic treatment, on syphilis, and the United States was called upon to handle ten thousand case records in this study, and after a canvass of about fifty clinics and institutions, we found five that maintained their records in such form as could be abstracted for the purposes of this study. These were: the Mayo Clinic, University of Michigan, Western Reserve University, the University of Pennsylvania, and Johns Hopkins University.

The first paper based on the material that was collected in abstracting these several thousand case records was on cutaneous and mucosal relapse in early syphilis, and it was found that among the cases that received from one to four doses of arsphenamine, there were 64 per cent relapses, and on cases receiving five to nine injections, there were 14 per cent, and in cases that received as much as fifteen injections, there were no relapses, and that brings us to the question of adequacy of treatment, because these cases manifested by cutaneous and mucosal manifestations are greater factors in the spread of syphilis than the original lesion itself.

I am just coming to the crux of the thing and I will be through in just a minute, if you please. In other words, in order to control syphilis, they must receive adequate treatment. We must prevent the possibility of these relapses occurring. We must administer sufficient amounts of arsphenamine to sterilize these cases that are in infectious stages and keep the condition from spreading as a public health problem throughout our communities.

In this census which we have just described, we found that 40 per cent of the cases were treated in public clinics, institutions; that 30 per cent of them were treated by specialists; that is, that 5 per cent of the physicians who treated it, had 12 or more patients under treatment at any one time; and 30 per cent of them were treated by the remainder of the physicians, and it was this 30 per cent of the physicians whom I wanted to try to interest in supporting the State Department of Health in the control of syphilis in these rural communities, by going a little beyond the usual practice, by trying to

retain patients under treatment for such a length of time as to sterilize them, by trying to get the community interest excited in the support of the State Department of Health in putting across broad educational campaigns and in establishing clinics for the treatment of indigents; for increasing the provision for the education of patients, and follow-up service which was so wisely included in the statement made by your special committee.

So convinced is the Rosenwald Fund and the Public Health Service of the need of stimulating the interest of the private practitioner in the adequate treatment of syphilitics sufficient to sterilize cases of the disease in the infectious stages, that we hospitalize for six weeks every case of syphilis in the infectious stages that presents himself.

We have felt that our officers in charge of venereal disease work who have come out of college and by reason of the complexities of medical education haven't received as complete and detailed instruction in the treatment of and diagnosis of the manifestations of syphilis as they should have had, should receive further instruction, and we have sent them to our larger clinic in Hot Springs and have given them special practical courses in the treatment of syphilis.

The Rosenwalds have subsidized this work in the areas where we have attempted to control it in the mass, setting aside a fund for courses for physicians who will be stationed at strategic points throughout the country to be the centers from which the doctrine of adequate treatment of syphilis will spread to other cities of the community.

Let me say one further thing and then I will be through. I made mention of the fact that the average individual affected with syphilis is unable to pay the fees usually charged. A very interesting illustration of this and how it is met, occurred in Mississippi, in Columbia County, where the physician whose usual charge was ten dollars for one dose of arsphenamine, on representation being made to him by a member of the State Board of Health, decided he would give a course of treatment of six doses for fifteen dollars, that is, three dollars for the first five doses, and the sixth dose would be given free of charge. He found by that arrangement some people applied to him for treatment and all of them were

presumably paying patients, and all were carried on his books as owing him fifteen dollars for the treatment, and his practice increased to such a degree that he had to employ assistants to help him out, and other physicians have been helping him.

I would feel that we have accomplished something if the physicians of Delaware would consider the present economic depression, which is forcing people to seek free treatment, just above the charity level, and would make the charges in syphilitics commensurate with the ability of the patient to pay, so that you see he gets treatment some way, somehow, in amount sufficient to render him innocuous, and by so doing greatly advance the solution of this question.

The law enforcement reaches a certain class of people, but it doesn't reach them all. There is nothing to prevent these people who are not incarcerated from spreading the disease because they are chronic and habitual disseminators of it. Sex education doesn't reach any great portion of the population, and the question eventually resolves itself into a medical one, as I have so briefly tried to outline for you in the limited time at my disposal.

I thank you, gentlemen!

DR. M. A. TARUMIANZ, Farnhurst: May I say a word or two? I am sure everyone appreciated the address of Dr. Jost and the discussion by Dr. Clark. In our work with mental cases in an institution we find that for the last ten years we have been doing routine Wassermann and that from 10 to 20 per cent of all admitted cases among whites are luetics, and 40 to 65 per cent of all negroes or colored patients are syphilitics.

I do not believe this condition will ever be remedied by merely clinics alone, but we shall have to request our State Board of Health to do the same kind of work in this as they have been doing in the past few years in diphtheria prevention and the treatment of diphtheria. I sincerely believe that only follow-up work will remedy the conditions, and if the State Board of Health will add a sub-department of follow-up workers who will continuously go after indigent syphilitics and bring them to the clinics for treatment, I am sure we will accomplish at least 50 per cent of the problem.

Thank you!

Too Many Nurses?

Training schools must curtail the steady production of more nurses or the morale of the nursing profession will break down completely. This is the opinion of the Committee on the Grading of Nursing Schools following an analysis of early returns of the 1930 census on workers.

How serious the oversupply of graduate nurses has become is revealed by the grading committee after tabulating figures for eighteen states and the District of Columbia. For this group, since the 1920 census, the total population has increased 7 per cent, while the total number of trained nurses has increased 78 per cent.

Although there are still areas of the country and groups of patients not properly nursed, owing to poor distribution and lack of special training, the figures for the forty-two cities studied show that the average nurse has no more than 149 days of employment in any given year, according to the present sickness rate. In Bangor, Maine, she has not more than 77 days of work, and in Ottumwa, Iowa, where employment conditions are best among the cities studied, she can work not more than 201 days in the year. Rates for the other cities range between these two.

States as a whole are somewhat less oversupplied with nurses, although in New Hampshire the nurse can expect no more than 190 days of work in the year, and in Maine, Vermont, Iowa, North Dakota, South Dakota, Kansas, Delaware, Montana, Wyoming, Arizona, Nevada, Idaho and the District of Columbia there is not nearly enough nursing to be divided between the trained and untrained nurses competing for patients.

Untrained nurses are not on the increase, census figures show, but trained nurses are being turned out to terrific competition by the thousands each year. In Maine, for example, there was in 1900 one trained nurse for every 5,068 persons; in 1910, there was one for every 910; in 1920, one for every 579, and in 1930 one for every 349.

"If nursing is to avoid disaster," says Dr. May Ayres Burgess in presenting these figures in the March number of the *American Journal of Nursing*, "the steady production of more students, who become graduates, must cease. It must cease not only in the small schools, but in most of the large schools as well. Graduate nurses must be employed. If they are unemployable, they must be re-educated. The schools of nursing have produced them. They are members of the profession. Unless their morale is to break down completely, they must either be eliminated or utilized.

"This is a year of national economic distress. Hospitals are short of funds. How, then, can hospitals take care of their patients with reduced numbers of student nurses, with increased numbers of graduate nurses, and without increasing the annual budget? Let us not assume that there is no solution for this problem. Nurses who are intimately familiar with hospital administration may be able to discover new economies, new methods of organization, which will make reductions in the number of student nurses possible. Unless some solution can be found, which it is within the practical means of the hospital to adopt, nursing will continue to grow in numbers and in distress."

What the census figures will show for densely populated states, such as Massachusetts, New York, Pennsylvania, Illinois and California, no one yet knows, but nursing leaders feel grave concern. Census reports for these and other states are being analyzed by the grading committee as rapidly as they become available.

"Even with the overproduction of nurses, there still exists the unnursed patient," comments Miss Mary M. Roberts, R. N., editor of the *American Journal of Nursing*. "Many persons are chronically sick at home; among these are persons suffering from arthritis. New and scientific knowledge on the care of arthritis brings new opportunities in nursing. The field of psychiatric nursing, too, is hardly touched. Patients with heart disease and tuberculosis require special nursing care. Some of the unemployed nurses can well take up special training that will fit them for these types of service."

EDITORIAL

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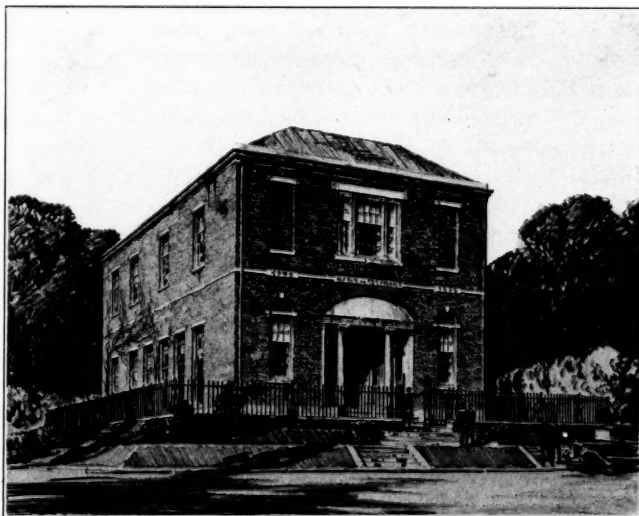
No. 6

cine and was dedicated. It was the old National Bank of Delaware that stood at Sixth and Market Streets since 1815. At that time some Philadelphia bankers were asked to be present at the dedication. They declined, saying traveling was too dangerous to venture that far. The bank merged with the Security Trust Company and the building and ground were sold to the Delaware Power and Light Company for a site for an office building. The removal of the building to its present site at Lovering Avenue, Union Street and Park Drive was made possible by some public-spirited citizens led by Mrs. Henry B. Thompson. Mrs. Thompson was the leading spirit in the movement to preserve this beautiful Colonial and substantial structure, and for a useful purpose. At the presentation she paid a glowing tribute to the doctors who, she said, were always at the beck and call of the suffering, and did so much good, much of the time without any material remuneration, and that they deserved such a gift as this fine structure which they could use both for their own benefit and that of the community. Mrs. Ernest du Pont's name should be mentioned, because the raising of funds to make this project possible was largely due to her effort, and she showed a keen interest in the affair throughout. These kind laymen intend to try to furnish the build-

DELAWARE ACADEMY OF MEDICINE

About three years ago a group of doctors got together and organized a Delaware Academy of Medicine for the purpose primarily of establishing a medical library in Delaware. The Academy was incorporated under the laws of the State of Delaware as a non-profit making corporation. Provision has been made for young unestablished doctors to become affiliated at very low dues, so that no reputable physician or dentist in the state will be denied its use.

June 1st the Delaware Academy of Medicine Building was presented to the Academy of Medi-



DELAWARE ACADEMY OF MEDICINE BUILDING

ing for us with appropriate furniture, shelves, etc., ready for the physicians and dentists to start what is hoped will eventually be the finest medical library to be found in any place the size of Wilmington. There is a new heating system in the basement. On the first floor is an auditorium and some smaller rooms back. On this floor will be held meetings where "scholar will teach scholar," and the rest of us. The second floor is for the library, where in addition to the large room there are some smaller ones that can be used for private study, and stack rooms. There is plenty of room for "books still alive and books yet unborn." There is a third floor space that can be furnished for a club room. Nature provided us all with a ready impulse to consume food and we can all use this. These upper floors can be reached by a side door entrance.

A medical library has been sorely needed in Wilmington and vicinity, and it is high time that we at last have one in the oldest state of the Union, containing the second oldest state medical society. Every physician, particularly in a place the size of Wilmington, should have access to the leading medical and surgical and special journals of the world, and the most important books. It is obvious that no one doctor can subscribe for but an infinitesimal proportion of such a large number, and if he could there would be a large waste unless a great many could have access to them. Moreover, many of these journals should be bound and kept for reference. Lack of space would make this impossible for any appreciable number of journals in a private house or office. Books are expensive and many are obsolete in a few years. Many are valuable when they are published and should be accessible to the profession. As Holmes said, "The latest medical intelligence should be spread out daily, as the shipping news is posted on the bulletin of the exchange." Our nearest professional libraries are in Philadelphia and Baltimore. We can use these by courtesy of some member. They are so inconvenient, though, that except for something very special we are not apt to make use of them.

It is now up to the physicians and dentists of the state who are members of this Academy or who should become members to demonstrate their worthiness of such a splendid gift by their lay friends. The Medical Library in Boston

started with six gentlemen meeting at the house of Dr. Henry Ingersoll Bowditch. We probably have a better start than that. It is a fine thing to have journals and substantial and permanent literature of the profession represented. Why is it important to have access to the original and see it in its entirety? "Learning as with water is never more fair, pure and simple than at its source." (Naude). "There is a great world of ideas we cannot voluntarily recall—they are outside the limits of the will. But they sway our conscious thoughts as the unseen planets influence the movements of those within the sphere of vision. The mind is full of irrevocable remembrances and unthinkable thoughts which take a part in all its judgments as indestructible forces." (Oliver Wendell Holmes). Osler reminded us that a well-used library for the general practitioner is one of the few correctives of the premature senility which is apt to overtake him, that his every-day experience becomes a mere accretion of isolated facts, without correlation, unless it is controlled by careful reading. He truly said that circumstances of life mould us into masterful, self-confident, self-centered men, whose worse faults partake of our best qualities.

We trust that all those who have not reached the stage of intellectual stagnation will join in making this project a paramount success. If there be any such doctor in our state let him come anyway so that our brethren also will be seen dwelling together in friendship and unity.

DR. WALKER AND HIS GANG

It was disclosed by Judge Seabury's Committee in New York City that Dr. William H. Walker, brother of the Mayor of New York, split money with a group of doctors who received large fees from the city for treating injured employes. It was shown that Dr. Walker's bank deposits in four years were \$431,258.00. Of Dr. Walker's four accomplices specifically named, two graduated from medical schools in this country, one from a medical school in Ireland, and one is not listed in the Medical Directory. Neither Dr. Walker nor any of his four cohorts is listed in the Medical Directory as belonging to any medical society. That means that not one is in good standing in his profession. If they were members of their county society

they would be expelled for unethical practicing. They probably were not able to become members if they tried or some may have been expelled. It is not likely, however, for a doctor who is a member of his society in good standing to risk being disgraced by becoming so low, in such gross violation of medical ethics and trust, as these men did. What is the moral of this?

No physician should be given a public health office or a responsible medical or surgical position unless he is thoroughly investigated, and found to be in good standing in his profession, and that usually means he is a member of his county medical society.

How is this to be accomplished? By bringing pressure on public officials to put in office or bestow honors on honest reliable people. How can this be done? By educating the public, so they will elect to office sensible, trustworthy servants. The public should know that not so many of the medical profession are scalawags, and most of these latter gentry are not in any county medical society. There are some, of course, but when a case can be proved against them, be it said to the credit of the society they are promptly repudiated and expelled.

A LOOKOUT FOR LINDY

The "never-to-be-forgotten case" of Baby Lindbergh has entered upon its semi-final stage—the finding of the criminals. This bids fair to be a long-drawn-out stage, unless co-ordination of efforts, via some Federal officer, yields results at a rate far in excess of that made by the New Jersey police. These latter are now the butts of many, perhaps justified, criticisms, though one answer to any critic would be that all the world knows that hindsight is better than foresight.

However, it seems to us it will take considerable evidence to wipe out the stigma of failing to follow the perfectly obvious lead given in one letter to "follow the telephone wires"; of failing to search every house within a wide radius, prac-

tically simultaneously; of failing to distinguish between crank letters and worth-while tips; and so on. Whether it is ever wise, in such a man-hunt, to entrust the campaign to a type of police that have been described as "mere traffic cops" is for the trained criminologist to say. Be that as it may, that stage of the work can be described in one word—failure. The only efforts that had a reasonable chance to accomplish anything or that may give some clue that ultimately leads to the criminals were those made by kindly old Jafsie, and about all the credit or thanks the world will give him for his pains is the knowledge that right now his life is not worth a plugged nickel.

We said this semi-final stage was likely to be a long one. Against this there are two possibilities: first, that somebody may "crack" under the terrific strain of evasion plus conscience; and second, that the gang and its accomplices in hide-outs, etc., must be fairly numerous, and perhaps somebody, more or less in his cups, may "leak." If either of these two possibilities materialize, or if the police hunt is successful, the final stage of bringing the culprits "implacably to justice" will be swift and sure.

The medical part of the recent chapter reflects great credit upon the medical profession. The protocol of the post-mortem performed when the body was found was most excellent, and gruesome as it was, it was the most authentic document the case has yet produced. In this case the medical profession has two services yet to perform: first, to watch out for some of the ransom money (a record of which should be sent to every physician) especially when treating strangers; and second, to listen for casual remarks or delirious mutterings from strangers or new patients whose previous medical attendant is unknown. Far-fetched though these two avenues may be, stranger things have happened, and may happen again. Let us hope so; at any rate, let the medical man keep a lookout for Lindy.

EDITORIAL NOTES

DEAR DOCTOR:

THE JOURNAL and the Cooperative Medical Advertising Bureau of Chicago maintain a Service Department to answer inquiries from you about pharmaceuticals, surgical instruments and other manufactured products, such as soaps, clothing, automobiles, etc., which you may need in your home, office, sanitarium or hospital.

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We want THE JOURNAL to serve you.

We are informed by the press that Wilmington's former prohibition enforcement officer, "Three-Gun" Wilson, may find his citation as being in contempt of court, made originally in the U. S. District Court here, something more than a mere batch of words. Wilson, furnished a key to the Democratic Club by a "squealer," entered and, claiming to find the law violated, made certain arrests, and a report to headquarters. The defense claimed illegal entry and moved to quash the indictment. The whole case hinged on Wilson's right to be in the club, but when asked to name his informer and key-lender he refused. The court then declared him in contempt. On appeal to the U. S. Circuit Court in Philadelphia the decision of the lower court here was upheld, two to one. The government will naturally appeal to the U. S. Supreme Court, and it is our conviction this court will find as have the two others.

The whole country is watching this case, since the principle involved is vital to both sides. While we presume to no knowledge of the law, it does seem to us that every man accused has a right to face his accuser. If the court of last resort upholds this view, the busy-bodies, the snoopers, the trouble-makers, and the professional propagandists will be put out of business, to our mind a consummation most devoutly to be wished. Even now these gentry are holding their tongues in their cheeks, lest they be dragged into court and made to stand responsible, via damage awards, for insinuation, innuendo, and false accusation. It is high time the body politic be purged of the ills of prohibition.

June is here, and with it once more the season of State Board examinations. As with most of

the things of life, there are two sides to be considered, the examiner and the examined.

To the examiner we say: make your questions comprehensive and fair; let them not involve too much minutiae, or too much length, and let them represent medicine as taught, not when you graduated, but as taught today, and then be sure you know the latest answers yourself. Better still, take your questions from the little booklet published by the National Board: their examinations are held up as models, and are accepted in three territories and 41 states, including Delaware.

To the examined we say: be as brief as you can—do not try to tell *all* you know; realize that you cannot "bluff" through; answer the question specifically—do not wander; do not waste time on a question you cannot answer—move on; never allow an examination to make you nervous, but march triumphantly into the examining room reciting Kipling's appropriate procession:

Lord God of Hosts! Be with us yet,
Lest we forget! Lest we forget!

The medical men of Indiana may be interested in knowing that a prominent politician recently said, "To hell with the medical men. They have no influence in politics and no one pays any attention to them." All of which indicates that it is high time that medical men pay some attention to politics, and show politicians that they *do* have some influence, and that they *do* pull together in voting as they should vote in their own interests. We admit that the average physician is a peculiar bird who is very much self-centered and but little interested in things going on about him. However, everyone takes a crack at the medical man, and it is about time that there appeared a spirit of retaliation, and one that is unified and effective. What we particularly desire to see is less allegiance to party politics by physicians. There are some Democrats and some Republicans who are antagonistic to every interest of the medical profession, and such men deserve to be rebuked at the primary and certainly rebuked at election time. THE JOURNAL takes no interest in party politics, but is for the medical profession, first, last and all the time.—*J. Ind. S. M. A.*, May, 1932.

DELAWARE PHARMACEUTICAL SOCIETY

Digitalis*

JAMES C. MUNCH, PH. D.†

Baltimore, Md.

In the course of my remarks to you two years ago the necessity for the physiological standardization of drug products was presented to suggest the necessity for attention to this important line of investigations. Last year the importance of standardization of anterior and posterior pituitary preparations was discussed. Following a definite program of development I desire to present some of the available information and to discuss the methods now used for the standardization of digitalis preparations.

Digitalis is sometimes called "fox glove." It grows wild in Germany and Switzerland, and is cultivated throughout the world. One of the distressing features of the World War was the interruption of an orderly supply of digitalis for this country. However, we learned that satisfactory material could be grown in Minnesota, Oregon, Washington and other states so that we are now more or less independent of a foreign supply.

The story is told that the Chancellor of the University of Cambridge was desperately ill with a somewhat obscure disease which was diagnosed "dropsy." He called in one of the leading physicians of his vicinity, Dr. Wm. Withering, who purged and bled him—the customary remedies of that day—without benefit. The female members of the Chancellor's family then brought diplomatic pressure to bear upon the patient to try a certain infusion for the treatment of his dropsical condition which was prepared by a trained nurse in the vicinity, and which had been reported by testimonials to produce miraculous cures of these conditions. Eventually a test was made—and the patient began to recover! Several months later Dr. Withering happened to meet the Chancellor walking along the street, and asked him why he was not dead? The reply was that he had been helped by this infusion. This aroused Dr. Withering's interest and he went to call upon the nurse and to discuss the composition of this remedy. Whether it was by gold—or by other means—Dr. Withering became

informed of the composition, and found that it was a veritable confusion indeed. It contained about thirty different ingredients. Withering undertook a detailed study of the mixture and found that digitalis was the desirable and the effective constituent. All this took place about the days of the opening of the Revolutionary War—and Withering's book was published about 1787.

Curiously, Withering stresses the value of digitalis in the treatment of dropsy but does not discuss its value in the treatment of diseases of the heart. He presents almost one hundred and fifty case reports and draws a definite conclusion regarding dosage which still holds—to push digitalis until an effect is shown on the stomach, the kidneys or the heart. We have not improved on this appreciably in spite of our elaborate and detailed studies.

Other cures for dropsy developed and digitalis fell into disuse for two generations. The development of pharmacology and physiology as sciences, and the impetus from the development of anesthesia about 1845 made detailed studies of a number of drugs an important feature and attention was directed to the once forgotten digitalis. This was re-discovered and its effect upon the heart found to be characteristic, unique and necessary. It has been found by intensive studies in the laboratory and in the clinic that digitalis is our only reliable drug in the treatment of certain types of heart disease, and at times that one-half of the heart patients in any given hospital or clinic require digitalis medication. Without digitalis life is almost impossible. With digitalis patients have lived for twenty or thirty years.

A study of the effects of digitalis has been made possible by the electrocardiograph. This is a simple instrument in principle, although it appears somewhat complicated upon first inspection. It is based upon the fact that the contraction of a muscle, such as the heart muscle, will produce a current of electricity. This current causes a change in potential along the nerves. To measure these changes in potential, electrodes are placed in contact with the right and left arms and with the left leg. Wires leading from these electrodes are connected to binding posts in contact with a very, very thin glass fibre which has been coated with silver and is

* Speech delivered before Delaware Pharmaceutical Society, 1931 Meeting, Rehoboth Beach, Del.

† Director of Pharmacological Research, Sharp & Dohme.

suspended between the poles of a powerful electromagnet. Changes in the potential applied to the terminals of the glass wire within this electromagnetic field cause oscillations of the fibre. These oscillations are thrown upon a moving camera film and photographed. A characteristic type of curve is produced when the heart-beats are perfectly normal. Various pathological involvements of the heart will cause different typical changes in the normal electrocardiogram. The administration of various drugs, as they affect different parts of the heart, will cause various changes in the character of the tracing. This affords a delicate and accurate method of determining the condition of the heart under physiological and pathological conditions. It has been called "A heart post-mortem before death."

I am grateful to Dr. Joseph B. Wolfe, head of the Department of Cardiology at Temple University School of Medicine, for the electrocardiograms demonstrating the normal and pathological hearts which accompany this article.

By means of electrocardiographic studies it has been found that digitalis has a predictable effect upon the heart in auricular fibrillation and in certain other involvements. Squill, strophanthus, convallaria, adonis and several other drugs have been found to exert a similar cardiac action, but for reasons which need not be elaborated here digitalis has proven the most desirable member of this group of "cardiotonics."

In determining the clinical effect of digitalis an electrocardiogram is very helpful, although it may be omitted at times. Electrocardiograms have been, and can be, made of the effect upon the hearts of man and of lower animals. In general it has been found that the heart of man reacts in a similar manner to the hearts of animals when digitalis, or other members of this group, are studied. Since our supply of humans needing digitalization is rather limited, it has been found necessary to determine the quantitative actions of various digitalis group preparations upon the lower animals, in order that standard and uniform material of predictable potency may be marketed in pounds and gallons. This has led to the intensive study of the action of digitalis upon lower animals, with the view of developing quantitative methods of standardization (bio-assays). To date there have been about 57 varieties of animals pro-

posed; daphnia, frogs, gold-fish, mice, rats, guinea pigs, pigeons, cats, and dogs being most widely suggested.

While of intense interest to follow, in general I do not believe that this group would be interested in the gruesome detail used by pharmacologists. However, I do believe that you will be interested in the general procedure adopted by the current pharmacopoeia, U. S. P. X. This is known as the "one-hour frog method." Frogs weighing between 20 and 30 grams are stored in running water at a temperature of exactly 20 degree C. for about 24 hours in order that their body temperature will be 20 degrees. They are then removed from the storage tank individually, wiped dry, and weighed. A measured volume of solution is then injected from a hypodermic syringe, by passing the tip of a syringe needle under the tongue and along the internal surface of the abdominal wall until the ventral lymph sac is entered. The measured volume of solution is then injected, the needle withdrawn, and the frog returned to a constant temperature bath at 20 degrees for a period of exactly one hour. The frog is then removed, and the brain and spinal cord destroyed by pithing with an ordinary hat pin or some similar weapon. The ventral lymph sac is opened to be certain that all of the injected solution is absorbed. The abdomen is then further opened to expose the heart. If too small a dose of material has been injected the heart will be beating, although the rate may be somewhat slower than in the uninjected animals. If an adequate, or too large a dose of material has been given, the heart will be stopped in a characteristic condition; the two auricles will be widely dilated and the single ventricle will be contracted in systole. No movement will be observable in any part of the heart muscle. A large number of frogs are injected at the same time with doses of various magnitudes, in an effort to determine that quantity which just produces this type of systolic arrest. Under normal conditions a tincture of digitalis of the strength specified in U. S. P. X. will produce this effect following a dose of 6 cc per kilo body-weight of frog. If a preparation such as a fluid extract or an infusion is tested corresponding adjustments in the "minimum systolic dose" are made. A tincture of digitalis which is only one-half as strong as the U. S. P. standard would have an

MSD of 12 cc per kilo whereas a preparation that was twice the U. S. P. required would have a value of 3 cc per kilo. Since there may be some variation in different lots of frogs, or in the susceptibility of the same frogs at different times, the sensitivity is determined at the time of each assay by simultaneously administering a solution of a crystalline substance, Ouabain, obtained from one of the strophanthus varieties. If the frogs show a normal sensitivity the MSD is found to be 0.5 milligram of ouabain per kilo body-weight. If the frogs differ from this standard susceptibility proper corrections are made in the observed values. When I started bioassay work for the Bureau of Chemistry of the United States Department of Agriculture, it was not uncommon to find tinctures of digitalis on the market which were very weak, or which were very, very strong. By preparing and distributing a standard sample of ouabain for the U. S. P. Revision Committee, which standard has been sent to all manufacturers and bioassayists in this country, as well as to a number of interested parties throughout the world, it has been possible to adopt a uniform "measuring stick" for use in the performance of this assay. By the use of this common standard it is now possible for the manufacturers who have properly equipped pharmacologic laboratories and experienced bioassayists to adjust every lot of digitalis manufactured to the same uniform potency. When a tincture of digitalis is freshly prepared, and tested, it is adjusted to a definite and uniform strength. If this tincture is properly stored in small bottles (one to four ounces) and protected from extreme ranges of temperature, as well as from direct sunlight, it may be expected to retain its potency for a period of six to eighteen months without appreciable change. If this tincture is not properly packaged and stored great losses in activity may be confidently predicted. The Committee on Pharmacology and Bioassays of the National Conference on Pharmaceutical Research, as well as a similar committee of the American Pharmaceutical Association, are now engaged in the co-operative study of the rate of deterioration of digitalis when stored under different conditions. I prepared two lots of tinc-

ture of digitalis and packaged them in amber, blue and flint glass one-ounce bottles. These have been re-assayed every three months for the past two years and we expect to continue this work for another year or so. In collaboration with Dr. John C. Krantz, extensive investigations have been undertaken to study the effect of various concentrations of alcohol at various pH levels upon the stability of th's product.

Digitalis leaf and tincture of digitalis are most commonly employed and seem to be equally effective. The fluid extract is used from time to time as well as the various galenical products and proprietary products of digitalis, but in general the available laboratory and clinical evidence fails to demonstrate any marked advantage over the tincture or the crude drug. The infusion has been extensively employed in the past under the belief that it was a more potent diuretic than the tincture or the crude drug. However, the consensus of present pharmacological opinion is that the diuretic effect is secondary to improvement in general cardiac involvement and that the infusion offers no advantage over the tincture.

Digitalis is the only drug available for the treatment of many types of heart disease. Without it patients die; with it they live. An underdose, or the proper dose of an inferior preparation, fails to give adequate stimulation to the heart and the patient's life is in danger. An overdose produces too great an effect—toxic symptoms intervene—and the patient is in danger of death from overdigitalization. It is therefore important and necessary that digitalis preparations of a uniform potency be marketed and made available for the maintenance and preservation of life. Digitalis effects are not produced in their entirety by any other drug in the pharmacopoeia. The efforts, cost and time spent by the larger manufacturers in properly standardizing, adjusting, stabilizing and packaging digitalis products are absolutely necessary in order that dependent products may be made available for pharmaceutical use. This is another instance in drug therapy where the highest degree of knowledge, training and skill are required, and you can "accept no substitute."—*Md. Pharm.*, Jan., 1932.

WOMAN'S AUXILIARY

MRS. MILTON P. OVERHOLSER

Chairman, Committee of Press and Publicity
Harrisonville, Missouri

"Delaware holds first place in this month's news with a unique undertaking. This state boasts among its honored citizens, Miss Emily P. Bissell, president of the Anti-Tuberculosis Society and originator of the Christmas seals. (Do you know that these seals are now eagerly sought by collectors, and that only one complete file of the twenty-five is in existence?) Mrs. Tomlinson, president of the Delaware Auxiliary and national vice-president, conceived the brilliant idea of enlisting the Anti-Tuberculosis Society in the campaign for periodic health examination, that goal dear to the medical heart, chief ally in the fight against the White Plague. A program for health examination is now in progress more thorough and intensive than any hitherto known. Besides the Auxiliary, it includes five other state organizations, and there have already been distributed 16 billboard posters; 12 "talkies"; 7 movies; 180 street car posters; to doctors, 100 Koch's translations; to teachers, press and doctors, 1000 Koch's announcements; newspaper articles totaling 432 inches; 30 newspaper stories; 2 radio talks; 39 addresses by physicians and other qualified persons before schools and clubs; 27 special school periods; 617 personal letters; and 49,050 leaflets, "Go to your Doctor for Physical Examination." (Please note that phrase, "Go to *your* Doctor," the man who understands you and can best judge of your condition.) Distribution has been made through 45 channels—gas and electric bills, banks, theatres, movies, clubs, schools, libraries, the university, and various men's and women's organizations. The work is being done by the Anti-Tuberculosis Society, which also pays the bills, but the moving spirit is one of our most highly valued Auxiliary members, Mrs. Robert W. Tomlinson. This campaign ranks with the Minnesota High School Radio Contests as an ideal exponent of the method of working through other organizations, the Auxiliary suggesting and guiding the work as approved by the Medical Societies. Please page all public relations chairmen, Auxiliary and Medical Society alike!"

The above comment is from Mrs. Walter Jackson Freeman, of Philadelphia, newly elected president of the National Auxiliary. The sympathies of all Auxiliary members are extended to her in the recent death of her famous father, Dr. William W. Keen, the nestor of American surgeons, who lived to the remarkable age of 95 years; 70 years a doctor.

At the convention of the National Auxiliary at New Orleans last month, Mrs. Robert W. Tomlinson, Wilmington, who had been the National Fourth Vice-President, was elected National Treasurer.

MISCELLANEOUS

New Blood Test for Cancer Developed by German

A new method of detecting cancer in its early stages has been developed by Dr. Hans Jacques Fuchs, member of the physiological institute of the Veterinary University of Berlin. An account of the new method was just given by Dr. Fuchs to a *Science Service* correspondent. Details will be published in a few months in a German scientific journal.

So far, two thousand cases have been successfully diagnosed by the new method, the diagnosis being confirmed by operation or dissection. The method also makes it possible to determine the presence or absence of cancer when an infectious disease occurs at the same time. Further, it is claimed that by this method the success of surgical or radiological treatment of cancer can be controlled.

The new method depends on the digestion of serum from the blood of a suspected cancer patient with fibrin prepared from the blood of a normal person and with fibrin from the blood of a person known to have cancer. The digestion goes on for ten hours at a temperature of 104 degrees Fahrenheit. The protein is then removed from these samples and the amount of non-protein nitrogen present in each is determined. Depending on the amount of non-protein nitrogen present, it is possible to make a diagnosis as to whether the suspected case is one of cancer or not.

The new method is the result of five years of incessant research work during the course of which Dr. Fuchs had to make a number of pieces of special apparatus in order to achieve the necessary exactness in his determinations. The method also marks the first time that a chemical determination of a serological process has been made.

A certain diagnostic test for cancer, such as this is hoped to be, will be particularly valuable because modern methods of treatment by surgery and radiation are chiefly successful only in the early stages of the disease. When cancer attacks the internal organs, it is nearly impossible to detect it in its early stages by present methods of diagnosis.—*Med. Searchlight*, May, 1932.

OBITUARY

CHARLES ANTHONY BECK

Dr. C. Anthony Beck was born at Hammondsport, N. Y., in 1875, and graduated in medicine at the University of Maryland in 1900, and two years later began the practice of medicine here. Shortly afterwards he donated his services to the Home of the Little Sisters of the Poor, at Fourth Street and Grant Avenue. For thirty years he had been attending to patients there, and was available at any hour of the day or night. During the administration of Mayor J. Harvey Spruance, M. D., he served as secretary of the Board of Health for one term. Later he was also a member of the Board of Education for a similar period. Dr. Beck was appointed to the Delaware Draft Board during the World War. He was a member of Washington Lodge, A. F. and A. M., the Delaware Consistory, Lu Lu Temple, A. A. O. N. M. S., and the Tall Cedars of Lebanon. He was also a member of the Delaware Gunners' and Anglers' Club.

Dr. Beck had been seriously ill for over a month before his death and two weeks prior thereto he had undergone an exploratory operation at the Wilmington General Hospital, when carcinoma of the biliary tract was found. He passed away quietly on May 20, 1932. Local services, conducted by Rev. George C. Graham, rector of Calvary P. E. Church, of which he was a member, assisted by Rev. Alban Richey, rector of St. John's P. E. Church, were held in Wilmington the following evening, and the body was interred on May 23rd at Scotland Neck, N. C.

Surviving are his wife, Mrs. Martha Cotten Beck, and a daughter, Nancy Beck. A son died six years ago following an automobile accident. He is also survived by one brother and three sisters.

The gum-chewing girl

And the cud-chewing cow
Are somewhat alike

Though different, somehow.
What difference?

O, yes, I see it all now:
It's the thoughtful look

On the face of the cow.—*Exch.*

Dried Lactic Acid Milks as a Long Continued Diet for Infants

Because of their inability to find references in the literature regarding the subject, JULIUS H. HESS, I. McKY CHAMBERLAIN and LOUIS S. ROBINS, Chicago (*Journal A. M. A.*, April 9, 1932), started a comparative feeding study with the hope of evaluating the effect on growth and development of infants following long continued feeding with dried lactic acid milks. The clinical results indicate that dried lactic acid milks can be used under the same conditions as cultured sweet milk and cow's milk plus U. S. P. lactic acid.

BOOK REVIEWS

Obstetric Education. White House Conference on Child Health and Protection. Pp. 302. Cloth. Price, \$3.00. New York: Century Company, 1932.

Under the headings obstetric education of physicians, obstetric education of nurses, obstetric education of midwives, obstetric education of the laity and social workers, and appendix, the various problems of obstetrics as pertain to its practice in this country have been carefully investigated and the results analysed. Just what can be accomplished is uncertain, and only the future can give the answer.

The first effort should be in re-awakening the obstetric conscience in the general practitioner, and the dissemination of a few rudimentary truths among the laity. The time is not ripe, nor the means available, for carrying out a more comprehensive schedule.

Clinical Interpretation of Laboratory Reports. By Albert S. Welch, M. D., Instructor in Medicine, University of Kansas. Pp. 366, with 17 illustrations. Cloth. Price, \$4.00. Philadelphia: P. Blackiston's Son & Company, 1932.

The title describes this book; it is not a text on laboratory technique, but on the meaning of the reports from the laboratory. The chapters are on blood, urine, feces, etc., and the interpretations are those usually accepted. It is concisely written, and contains an excellent bibliography and index. The author conservatively reminds us that laboratory "tests are performed by hand, read by eye, and should be interpreted by a rich fund of knowledge and good judgment," and he sagely adds that "any practitioner

who allows a laboratory to make his diagnosis for him is admittedly a weak diagnostician." With such a sane background the author has produced an excellent book.

Modern General Anesthesia. By James G. Poe, M. D., Lecturer on General Anesthesia, Baylor University. Second edition. Pp. 281, with 14 illustrations. Cloth. Price, \$2.50. Philadelphia: F. A. Davis Company, 1932.

The first edition of this practical little manual was soon exhausted, mute evidence that medical students and internes found it helpful. Brevity is also one of the characteristics of the work, but this is not carried too far. All the usual inhalation anesthetics are considered, as well as the non-volatile ones; there is a chapter on pre- and post-operative care; while several chapters are devoted to a detailed discussion of general anesthesia. The book can be well recommended.

Manual of Public Health Nursing. National Organization for Public Health Nursing. Pp. 253. Cloth. Price, \$1.50. New York: Macmillan Company, 1932.

As indicated in the title, this volume describes the aims and methods of public health nursing. Part I deals with organization and administration, and Part II with nursing procedure and technique. Part I is brief, but contains an ample description of its subject matter. Part II, which takes up four-fifths of the book, gives in detail the technique to be followed in the various services rendered—morbidity, maternity, infant and pre-school, school nursing, communicable diseases, etc. Since these sundry techniques have been compiled from various sources and passed upon by medical experts and public health authorities, there is in them very little that could be criticised, and even then only some minor thing, such as recommending a certain proprietary as a disinfectant. Many physicians will question the desirability of a nurse taking blood pressures, making urinalyses, or listening for foetal hearts: our own opinion is that, in a pinch, a poor report is better than none at all. If, however, a nurse rigidly follows the technique set up in this book she should be a very safe and proficient nurse, and since the book abounds with cautions to "consult the physician," and to "co-operate" with him, she should also be a tactful and successful nurse. The style is neces-

sarily didactic; the diction is clear and terse. There are no illustrations.

The chief defect of the book is its index: it really deserves a better one. Look for vaginal douche, for instance, and you will find it as follows:

Morbidity service
Treatments and techniques
Douche, vaginal, 83

Or, blood pressure or urinalysis, as follows:

Maternity service
Prenatal care
Blood pressure, 96
Urinalysis, 99

It is apparent that the availability of the text for ready reference is seriously lessened by the poor index. And the next edition should spell the illustrious name of Wassermann correctly.

Nevertheless, we consider this book an excellent one, and while its circulation will be limited to those more especially concerned with public health work, we would be glad if the medical profession at large had a better understanding of what the visiting nurse does and how she does it—knowledge which this manual furnishes very completely.

The Expectant Mother's Handbook. By Frederick C. Irving, M. D., Professor of Obstetrics, Harvard Medical School. Pp. 203, with 26 illustrations. Cloth. Price, \$1.75. Boston: Houghton Mifflin Company, 1932.

The author in writing this book for lay reading succeeded in writing what could be classed as an abbreviated textbook in obstetrics. Couched in very simple English, a style that deals with the subject matter clearly so that a lay person without previous training in medical nomenclature can readily understand and obtain a comprehensive knowledge of the subject.

The arrangement of this book is in a logical order of sequences; beginning with a chapter on anatomy and physiology of the female reproductive organs, then a chapter on embryology, and a chapter on pregnancy and the common discomforts and complications that may arise, also one on anesthesia, diets, and finally the routine care of the baby.

The chapters on anatomy and physiology and embryology are augmented by simple drawings which are easy to understand. The chapter on embryology, usually a very difficult subject for explanation, stands out as an example of brevity

and at the same time is intelligible and readily understood.

Another example of thoughtfulness is to be found in the chapter on complications of pregnancy. The author lays stress on the recognition and particularly the prevention of complications of pregnancy, at the same time, however, he does it in such a manner as not to make a pregnant woman who reads this book feel that her life is in danger.

This handbook should be well recommended to pregnant patients in order that the patient may better appreciate the doctor's efforts in caring for her. The reading of this book will result in more intelligent co-operation on the part of the patient.

Diseases of the Coronary Arteries. By Don C. Sutton, M. D., Assoc. Prof. Med., Northwestern Univ., and Harold Lueth, M. D., formerly Instructor Physiol., Northwestern Univ. Pp. 164, with 42 illustrations. Cloth. Price, \$5.00. St. Louis: C. V. Mosby Company, 1932.

In reviewing this book of Sutton and Lueth on coronary artery disease (myocarditis), I find this a most excellent piece of work. The thoughts expressed in this book on disease of the coronary arteries are certainly based on facts, and parallel the findings of other well-known men who are doing work in the cardiac field. The opinion expressed here very definitely corroborates our own findings, both clinically and from a cardiographic standpoint, for the past several years. Their suggestions regarding treatment are theoretically sound and clinically efficient.

I would commend this book to all physicians, with the full confidence that its careful perusal and study would elucidate many of the cardiac problems which confront them today.

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